



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/224,637	12/31/1998	YUVAL OFEK	E0295/7080	3449

7590 11/18/2004

MATTHEW B LOWRIE
WOLF GREENFIELD & SACKS
600 ATLANTIC AVE
BOSTON, MA 02210

EXAMINER

VITAL, PIERRE M

ART UNIT	PAPER NUMBER
----------	--------------

2188

DATE MAILED: 11/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/224,637

Applicant(s)

OFEK ET AL.

Examiner

Pierre M. Vital

Art Unit

2188

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-18, 26 and 27 is/are allowed.
- 6) ☒ Claim(s) 19-25 and 28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 April 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to applicant's communication filed October 25, 2004 in response to PTO Office Action mailed August 17, 2004. The Applicant's remarks and amendments to the claims and/or the specification were considered with the results that follow.
2. Claims 1-28 have been presented for examination in this application. In response to the last Office Action, no claims have been amended. No claims have been canceled or added. As a result, claims 1-28 are now pending in this application.

Response to Arguments

3. Applicant's arguments, see Pages 3-5, filed October 25, 2004, with respect to claims 11-18 and 27 have been fully considered and are persuasive. The rejection of claims 11-18 and 27 has been withdrawn.
4. Applicant's arguments, see Pages 2-3, filed October 25, 2004, with respect to the rejection(s) of claim(s) 19-25 and 28 under 35 USC 102(e) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Yanai et al (US6,647,474).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 19, 20, 23-24 and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Yanai et al (US6,647,474).

As per claim 19, Yanai discloses a method for transferring data from at least one of a plurality of primary storage elements to a secondary storage element, the plurality of primary storage elements comprising a primary storage element that serves as primary non-backup storage for a host computer that is separate from and coupled to the primary storage element [col. 5, lines 29-32), the method comprising the steps of:

automatically establishing a first connection through a network between a first primary storage element and the secondary storage element through which a first logical object can be transferred from the first primary storage element to the secondary storage element [*multiple links may be obtained between the primary and secondary storage system; col. 5, lines 51-56; the primary storage system automatically controls the duplication or copying of data to the secondary storage system; col.6, line 40-43; the primary and secondary storage controllers may be connected utilizing network connections; col. 4, lines 59-62*], the first connection being determined by at least one of the first primary storage element and the

secondary storage element [*the primary storage system automatically controls the duplication or copying of data to the secondary storage system*; col.6, line 40-43]; and transferring the first logical object from the first primary storage element directly to the secondary storage element over the first connection [*the primary host may include a data signal path 58 directly into the channel adapter 54 of the secondary data storage system 46*; Fig.1, col. 5, lines 33-41].

As per claim 20, Yanai discloses automatically establishing a second connection through a network between a first primary storage element and the secondary storage element through which a first logical object can be transferred from the first primary storage element to the secondary storage element [*multiple links may be obtained between the primary and secondary storage system*; col. 5, lines 51-56; *the primary storage system automatically controls the duplication or copying of data to the secondary storage system*; col.6, line 40-43]; and transferring a second logical object from one of the primary storage devices directly to the second storage device directly over a second connection [*multiple links may be obtained between the primary and secondary storage system*; col. 5, lines 51-56; *the primary host may include a data signal path 58 directly into the channel adapter 54 of the secondary data storage system 46*; Fig.1, col. 5, lines 33-41].

As per claim 23, Yanai discloses the step of automatically establishing comprises a step of establishing a path through a network [col. 4, lines 54-62].

As per claim 24, Yanai discloses the use of a tape library unit [col. 1, line 59].

As per claim 28, Yanai discloses transferring data from the first one of the storage elements to the secondary storage element without involving the host computer

[primary storage system automatically controls copying of data to the secondary storage system transparently to the primary host computer, col. 6, lines 40-43].

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 21 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanai et al (US6,647,474) and Beardsley et al. (US5,680,580).

As per claim 21, Yanai discloses the claimed invention as detailed above in the previous paragraphs. However, Yanai fails to specifically teach that a secondary storage device including a plurality of ports coupled to the network to send and receive data on the network in parallel as recited in the claims.

Beardsley discloses a secondary storage device including a plurality of ports coupled to the network to send and receive data in parallel [col. 4, lines 63-66; col. 14, lines 20-21] to improve system throughput by initiating multiple request connects concurrently (see abstract). Since the technology for implementing a secondary storage device including a plurality of ports was well known, and since a secondary storage

Art Unit: 2188

device including a plurality of ports improve system throughput by initiating multiple request connects concurrently, an artisan would have been motivated to implement improve system throughput by initiating multiple request connects concurrently in the system of Yanai. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify the system of Yanai to include a secondary storage device including a plurality of ports because a secondary storage device including a plurality of ports was well known to improve system throughput by initiating multiple request connects concurrently as taught by Beardsley.

As per claim 25, the combination of Chin and Beardsley fails to teach a secondary storage device comprising data movers as recited in the claims. Official Notice is taken that both the concept and the advantages of providing for storage devices, which include data movers, are well known and expected in the art.

It would have been obvious to one of ordinary skill in the art to have included the data movers in the combination of Chin and Beardsley as these data movers are known to provide a means for communication between the backup devices and the network.

9. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yanai et al (US6,647,474) and Misinai et al. (US5,848,241).

As per claim 22, Yanai discloses the claimed invention as detailed above in the previous paragraphs. However, Yanai fails to specifically teach that the plurality of host computers are heterogeneous and that they comprise a first host computer comprising a first platform and a second host computer comprising a second platform different from the first platform as recited in the claim.

Misinai discloses a plurality of host computers are heterogeneous and that they comprise a first host computer comprising a first platform and a second host computer comprising a second platform different from the first platform that facilitates the sharing of relevant data items between and among the computer systems and between the computer systems and controllers of the storage devices in an efficient way (col. 2, lines 29-35). Since the technology for implementing heterogeneous computers in a system was well known, and since the use heterogeneous computers facilitates the sharing of relevant data items between and among the computer systems and between the computer systems and controllers of the storage devices in an efficient way, an artisan would have been motivated to implement host computers as heterogeneous computers in the system of Yanai. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify the system of Yanai to include a heterogeneous plurality of host computers because they were well known to facilitate the sharing of relevant data items between and among the computer systems and

between the computer systems and controllers of the storage devices in an efficient way as taught by Misinai.

Allowable Subject Matter

10. Claims 1-18 and 26-27 are allowed over the prior art of record.

11. The following is a statement of reasons for the indication of allowable subject matter:

(a) As per claim 1, the prior art of record does not teach or suggest “a secondary storage device to provide backup storage for the host computer; and a network, separate from each of the one or more communication links that couple the storage domain to the host domain, that couples the plurality of primary storage devices to the secondary storage device to permit one of the primary storage devices to access the secondary storage device through the network without using any of the one or more communication links that couple the storage domain to the host domain so that communication between the plurality of primary storage devices and the secondary storage device can occur over the network simultaneously with communication between the host domain and the storage domain through the one or more communication links” in combination with the other elements set forth in the claimed invention.

Therefore, dependent claims 2-10 and 26 are allowable as being dependent upon independent claim 1 and having additional allowable features therein.

(b) As per claim 11, the prior art of record does not teach or suggest “a single backup controller capable of backing up data stored from both first and second host computers on the plurality of primary storage devices to a secondary storage device, wherein the data stored from the first host computer on the plurality of primary storage devices has a first format established by the first platform and the data stored from the second host computer on the plurality of primary storage devices has a second format established by the second platform” in combination with the other elements set forth in the claimed invention.

Therefore, dependent claims 12-18 and 27 are allowable as being dependent upon independent claim 11 and having additional allowable features therein.

Conclusion

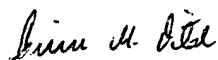
12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is required under 37 C.F.R. § 1.111 (c) to consider these references fully when responding to this action. The documents cited therein teach computers on different platforms having different data formats.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pierre M. Vital whose telephone number is (571) 272-4215. The examiner can normally be reached on Mon-Fri, 8:30 am - 6:00 pm, alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on (571) 272-4210. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

November 9, 2004


Pierre M. Vital
Examiner
Art Unit 2188